SNELLEN DISTANCE TEST CHART
10
11
12
13
14
15
16

SNELLEN DISTANCE TEST CHART
10
11
12
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16

I 49.89/2: 85 (15) map B20

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

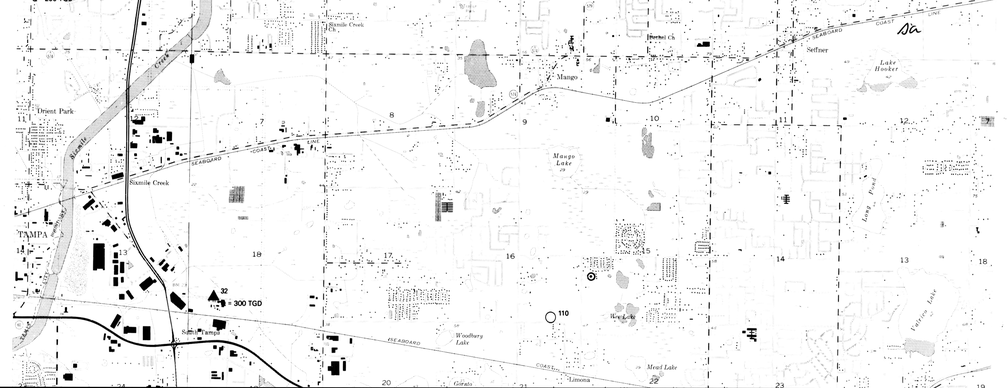
BRANDON QUADRANGLE
FLORIDA-HILLSBOROUGH CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

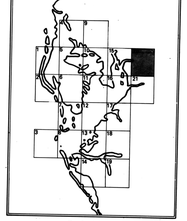
MAP B20

ORIGINAL **TAMPA BAY ENVIRONMENTAL ATLAS**

WATER RESOURCES

BRANDON





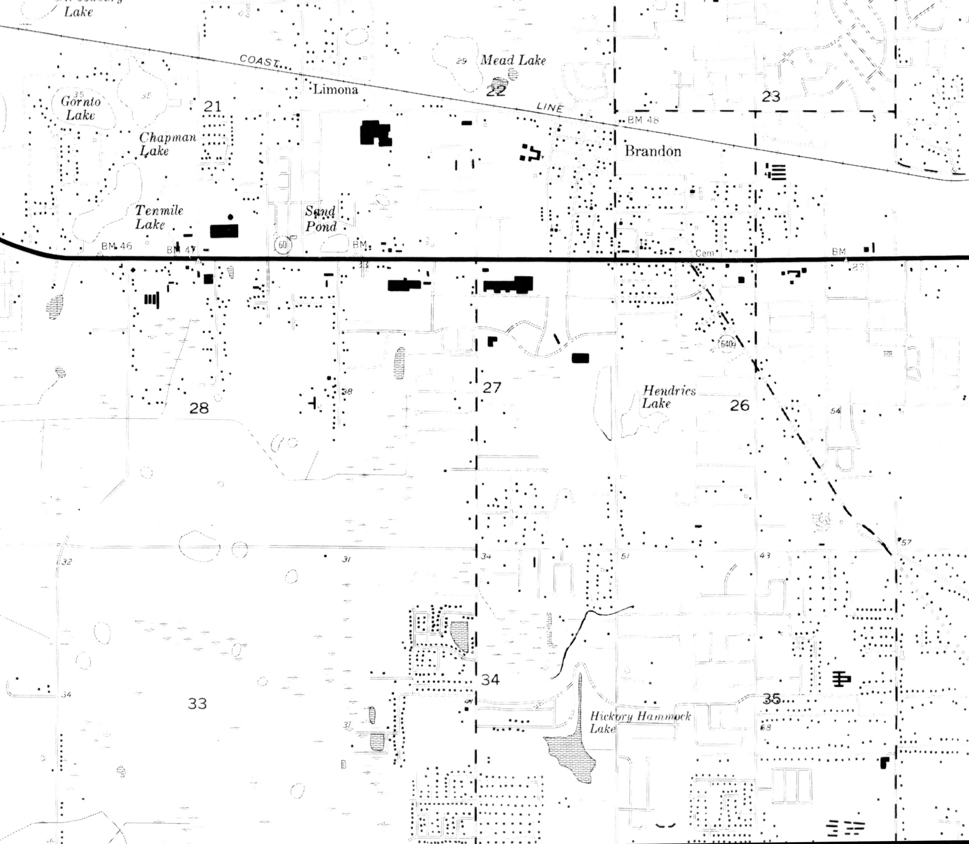
Scale 1:24,000

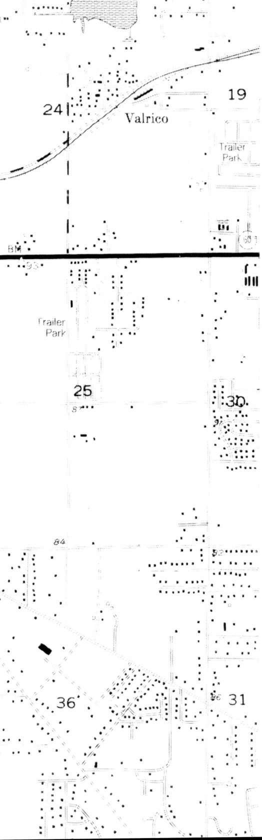
1984

TOPICAL MAPS IN THIS ATLAS:
A. BIOLOGICAL RESOURCES
B. WATER RESOURCES

Produced by U.S. Fish and Wildlife Service
Projection and 1,000 meter grid, zone 17: Universal Transverse Mercator
10,000-foot grid ticks based on Florida coordinate system, east and west zones

SEABOARD
20
43
23
24
19
Substation
301
43
24
30
Commemorative Cem
27
25
26
29
26
22
Creek
Delaney
30
28
676
24
29
21
676
31
Tower (WFLA-FM)
31
35
36
31
32


Lake
COAST
LINE
Mead Lake
29
Limona
21
22
23
Gornto Lake
35
35
Chapman Lake
Tenmile Lake
Sand Pond
Brandon
BM 48
BM 46
BM 47
60
BM
Cem
BM
23
23
640
28
27
26
38
Hendrics Lake
54
57
34
51
43
32
31
33
34
34
35
31
Hickory Hammock Lake
68


24
19
Valrico
Trailer Park
BM
95
60
Trailer Park
25
30
84
92
36
31

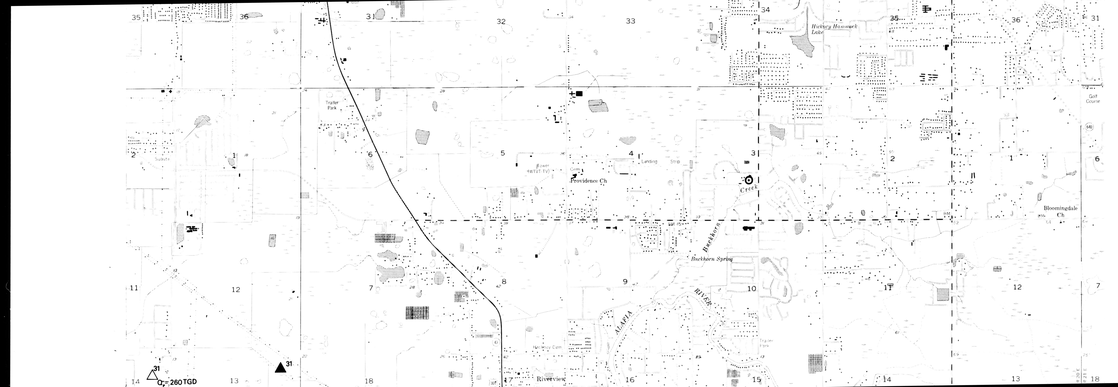
Produced by U.S. Fish and Wildlife Service
Projection and 1,000 meter grid, zone 17: Universal Transverse Mercator
10,000-foot grid ticks based on Florida coordinate system, east and west zones

Overlay material compiled in 1984 from latest available data obtained from Federal, State and Local government agencies and other sources.

There is no map A19 due to a lack of data.

LEGEND

▪▪▪▪▪35▪▪▪▪▪	**MEAN ANNUAL MID-DEPTH SPECIFIC CONDUCTIVITY ISOPLETH (WATER QUALITY) CONTOUR MAP** Five year mean annual specific conductivity September 1978 - August 1983 (mmhos)
	POINT SOURCE DISCHARGES *
▲10 Q=___	Industrial Point Source Discharge. Q is permitted capacity in total gallons per day (tgd) or in millions of gallons per day (mgd).
△10 Q=___	Municipal Point Source Discharge. Q is permitted capacity in total gallons per day (tgd) or millions of gallons per day (mgd).
Dredge Spoil Area	**DREDGE SPOIL DISPOSAL SITES**
	TIDE STATION * (National Ocean Service)
☼10	Active tide station. The tide station number is listed next to the symbol.
□10	Inactive tide station location. The tide station number is listed next to the symbol.



DREDGE SPOIL DISPOSAL SITES

TIDE STATION *
(National Ocean Service)

10 Active tide station. The tide station number is listed next to the symbol.

10 Inactive tide station location. The tide station number is listed next to the symbol.

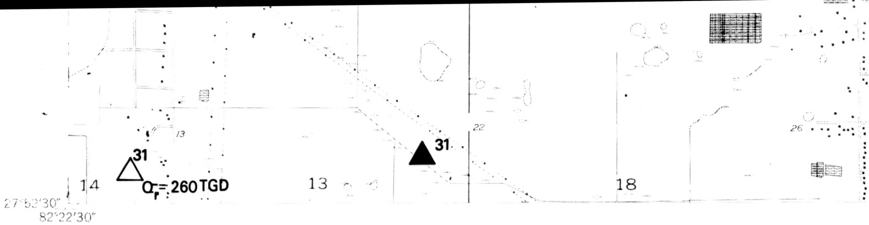
10 WATER QUALITY SAMPLING STATION *
(Hillsborough County Environmental Protection Commission)
Five year seasonal means, Sept. 1978 - Aug. 1983

2 BATHYMETRY
The contour interval is 2.0 meters with an initial 1.0 meter supplemental contour line added to better define shoals and inshore tidal flats.

INTERTIDAL ZONE
This zone demarcates the area exposed and flooded by the tides and occurs between the line and the shore.

GENERALIZED SEDIMENT MAP
- Sand
- Shelly Sand
- Silty Sand
- Clayey Sand
- Sandy Clay
- Silt

NET TIDAL CURRENT
Resultant tidal current. The direction is indicated by the arrow and the discharge range is feet per second
- 0.01 - 0.10 ft/sec
- 0.11 - 0.20 ft/sec
- 0.21 - 0.30 ft/sec
- 0.31 - 0.50 ft/sec
- > 0.50 ft/sec



THE TAMPA BAY ENVIRONMENTAL ATLAS WAS PRODUCED BY THE U.S. FISH AND WILDLIFE SERVICE, DIVISION OF BIOLOGICAL SERVICES NATIONAL COASTAL ECOSYSTEMS TEAM (FWS/OBS) FOR COASTAL PLANNERS, DECISION MAKERS AND THE GENERAL PUBLIC, TO DETERMINE AND EVALUATE CHANGE AND TO RESOLVE CONFLICTS AMONG LAND USES, FISH AND WILDLIFE REQUIREMENTS, AND THE MAINTENANCE OF ECOLOGICAL DIVERSITY. THE STUDY AREA INCLUDES A MAJOR PORTION OF THE COASTAL COUNTIES OF PINELLAS, HILLSBOROUGH, MANATEE, AND A SMALL PORTION OF SARASOTA. THERE IS NO ATTEMPT, IN THE DESIGN OR PRODUCTS OF THIS STUDY, TO DEFINE THE LIMITS OF PROPRIETARY JURISDICTION OF ANY FEDERAL, STATE, OR LOCAL GOVERNMENT TO ESTABLISH THE GEOGRAPHICAL SCOPE OF THE REGULATORY PROGRAMS OF GOVERNMENT AGENCIES.

THIS MAP HAS BEEN COMPILED FROM A VARIETY OF SOURCE MATERIALS INCLUDING MAPS, AERIAL PHOTOS, AND REPORTS. SINCE MANY SOURCES CONTAINED GENERALIZED LOCATIONS OF RESOURCES AND OTHER MAPPED FEATURES, THE USER SHOULD NOT RELY ON THESE MAPS FOR PRECISE MEASUREMENTS OF DISTANCES OR AREAS.

PRIMARY SOURCES OF MAPPED INFORMATION

SALINITY: Conductivity for Tampa Bay water quality sampling stations Sept. 1978 - August 1983. Hillsborough County Environmental Protection Commission.

POINT SOURCE DISCHARGES: Computer printout of industrial and municipal point source discharges in West Central Florida. Florida Dept. of Environmental Regulation, 1983.

DREDGE SPOIL DISPOSAL AREAS: Dredge and Spoil easement location maps. Florida Dept. of Natural Resources.

N.O.S. TIDE STATIONS: Index of tide stations for the state of Florida. National Ocean Service, Rockville, Md. 1981.

WATER QUALITY: Total chlorophyll, conductivity, turbidity, temperature and total nitrogen data for Tampa Bay water quality stations, Sept. 1978 - August 1983. Hillsborough County Environmental Protection Commission.

BATHYMETRIC: Bathymetric map to St. Petersburg Quadrangle, N.O.S. 1978.

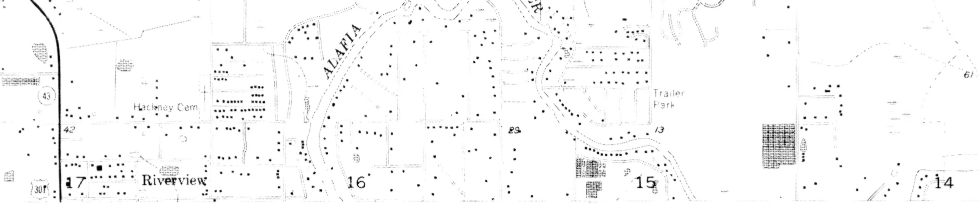
INTERTIDAL ZONE: Nautical Chart #'s 11410, 11413, 11414 and 11425. N.O.S., Rockville, Md. 1983.

SEDIMENTS: Sediments, oceanographic observations and Floristic data for Tampa Bay, Florida and adjacent waters, 1961-1965, Taylor and Saloman, 1969.

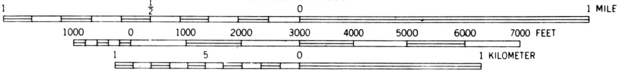
TIDAL CURRENTS: Changes in tidal flow, circulation and flushing caused by dredge and fill in Tampa Bay, Florida. U.S. Geological Survey Open File Report #84-447. Goodwin, 1984.

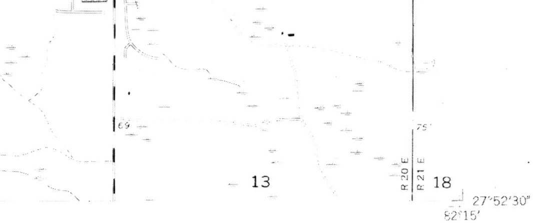
FRESHWATER-SALTWATER INTERFACE: Position of the Freshwater-Saltwater interface in the upper part of the Floridan aquifer, Southwest Florida, 1979. U.S.G.S. water resources open-file report 82-90. Causseaux and Fretwell, 1982.

FOR COMPLETE REFERENCE SEE MAP NARRATIVE



SCALE 1:24 000





NET TIDAL CURRENT

Resultant tidal current. The direction is indicated by the arrow and the discharge range is feet per second.

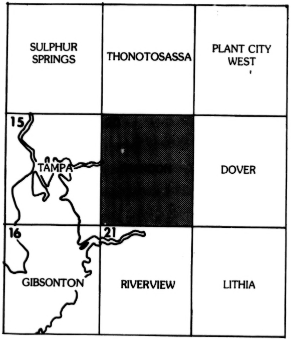
→	0.01 - 0.10 ft/sec
→	0.11 - 0.20 ft/sec
→	0.21 - 0.30 ft/sec
→	0.31 - 0.50 ft/sec
→	> 0.50 ft/sec

F ▬▬▬▬▬ S

FRESHWATER/SALTWATER INTERFACE

(U.S. Geological Survey 1979)
250 mg/l line of equal chloride
concentration in the upper part
of Floridan aquifer.

**Symbols appearing with numbers are described more fully in the narrative*



Note: Specific conductivity values on the supplemental legend should be in μmhos.

Supplemental Legend for Water Quality Stations on This Map

Station #110 **Lat. 27°57'08"** **Long. 82°18'19"**

PARAMETER	SPRING (3-5)	SUMMER (6-8)	FALL (9-11)	WINTER (12-2)	ANNUAL (1-12)
Total Chlorophyll (ug/l)	57.6	65.3	36.5	30.2	47.4
Conductivity (mmhos)	22508	26545	21328	29995	25094
Turbidity (NTU'S)	5.2	6.7	7.2	3.5	5.6
Temperature (°C)	24.9	31.0	26.7	18.4	25.2
Total Nitrogen (mg/l)	1.71	1.28	1.39	0.86	1.31

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BEST AVAILABLE COPY

ESOLUTION TEST CHART
S - 1010a
TEST CHART No. 2)

2.5